Title (en)

Television transmission system using transform coding.

Title (de)

Fernsehübertragungssystem mit Verwendung von Transformationskodierung.

Title (fr)

Système de transmission de télévision utilisant le codage par transformée.

Publication

EP 0286183 A1 19881012 (EN)

Application

EP 88200639 A 19880406

Priority

NL 8700843 A 19870410

Abstract (en)

In a television transmission system for digital picture signals each picture is split up into sub-pictures of NxN pixels for the purpose of reducing the bit rate. Each sub-picture is subjected to a two-dimensional discrete cosine transform (DCT) for determining basic picture weighting factors (coefficients) which are converted by means of adaptive coding into code words of variable length. This two-dimensional DCT is realised by multiplying the pixels of each row of the sub-picture by the NxN DCT matrix (one-dimensional transform). Consequently, an NxN array of product elements is obtained. The transposed version thereof is once more multiplied by the NxN DCT matrix. Such a one-dimensional transform comprises three main steps. In a first main step the pixels of a row are converted in a first iteration step into N/2 sum elements u1,i and N/2 difference elements v1,i. In a subsequent iteration step the N/2 sum elements u1,i are converted into N/4 further sum elements u2,i and N/4 further difference elements v2,i. This process is repeated until only two sum elements are left. The difference elements obtained in each step are used to determine a plurality of auxiliary sum elements in still further iteration steps. The remaining two sum elements, the difference elements and the auxiliary sum elements are each multiplied in the second main step by an associated linear combination of elements of the DCT matrix. Of the sub-products thus obtained selected one's of those products are added together or are subtracted from each other in the third main step so that the desired product elements are obtained.

IPC 1-7

H04N 7/133; G06F 15/332

IPC 8 full level

H04N 7/26 (2006.01); **G06F 17/14** (2006.01); **H04N 7/30** (2006.01)

CPC (source: EP KR US)

G06F 17/14 (2013.01 - KR); **G06F 17/147** (2013.01 - EP US); **H04N 19/60** (2014.11 - EP US)

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Designated contracting state (EPC)

AT DE FR GB IT

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